

**EVALUATION OF PATIENTS' SATISFACTION WITH POSTOPERATIVE OUTCOMES
FOLLOWING LUMBER DISC HERNIATION SURGERY**

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Article Received on 12/08/2017

Article Revised on 03/09/2017

Article Accepted on 24/09/2017

ABSTRACT

Introduction: Although it is a subjective judgment, patients' satisfaction becomes one of the main parameters used to assess the outcomes of disc herniation surgery. This study aimed to investigate the level and the determinants of patients' satisfaction with the short-term outcomes following lumber disc herniation surgery. **Methods:** This is one arm clinical trial design recruited 68 patients with grade one disc herniation on L4-L5 level in King Faisal Specialist Hospital. The patients' satisfaction was assessed three months after surgery using a specifically designed questionnaire consists of two main sections. Section A contains questions investigated data about background variables include age, gender, duration of pain, and preoperative functional status. Section B contains questions about the patients' satisfaction with the surgery outcomes. The responses for the first five statements were collected in 5-grade scale included strongly dissatisfied, dissatisfied, I do not know, satisfied, and strongly satisfied. The last question was assessed by dichotomous response (Yes/No). **Results:** This study found, approximately, 57% of the patients were females and about 62% were above 50 years old. The majority of patients reported satisfaction in regards to all post-operative clinical outcomes, and 54.4% of them were generally satisfied with the surgery outcomes. The patients were most satisfied about return to work while they were least satisfied about their ability to exercise after the surgery. **Conclusion:** We concluded that the majority of patients reported satisfaction in regards to all post-operative clinical outcomes. Age, duration of pain and preoperative functional status were significant predictors for the general patients' satisfaction.

KEYWORDS: Satisfaction, Surgery, Spine, Disc, Herniation, Outcomes.**INTRODUCTION**

The frequency of spine surgery increased with aging process and elevated level of the obesity in the general population.^[1] The outcomes of spine surgery is affected by the functional status and other associated medical conditions.^[2] Psychological and mental conditions such as anxiety and depression were found correlated with poor outcomes of the surgery.^[3] The disc herniation surgery is an elective treatment in patients where the nonsurgical treatment has no significant effect on leg pain or movement.^[4] The short-term assessment of the disc herniation surgery, which evaluated by clinical outcomes and patients' satisfaction, showed a success rate of 70-95%.^[5-7] The long-term outcomes of the surgery, from 7 to 20 years period of follow up, showed lower success rate and higher occurrence of the adverse results.^[8]

There are various methods used to assess the success rate of disc herniation surgery include rate of return to work, the quality of life, self-assessment by the patients, the reduction of pain level and patients' satisfaction in regards to the surgery outcomes.^[9-11] Recently, patients have high expectations for outcomes of spine surgery,

which was associated with low level of satisfaction with the surgery outcomes.^[12] However, some studies found that high expectations with spinal surgery reflected patients' motivation, which improve the outcomes of the surgery.^[13] The patients' satisfaction is important since highly satisfied patients were found more compliant with the treatment instructions.^[11] Factors influencing patients' satisfaction with spinal surgery include patients' age, patients' gender, type of the surgery, duration of pain, functional status, in addition to psychological determinants.^[14-17]

Recent studies showed increased patients' satisfaction with surgical treatment of lumber disc herniation in comparison to non-surgical treatment.^[18] Although it is a subjective judgment, patients' satisfaction becomes one of the main parameters used to assess the outcomes of disc herniation surgery.^[6]

This study aimed to investigate the level and the determinants of patients' satisfaction with the short-term outcomes following lumber disc herniation surgery.

METHODS

This is one arm clinical trial design recruited 68 patients with grade one disc herniation on L4-L5 level in King Faisal Specialist Hospital. Patients with previous history of disc herniation surgery or other spinal conditions were excluded. The surgeries were carried out by equivalently qualified surgeons and the post-operative hospital stay range from 5 to 7 days. The patients' satisfaction was assessed three months after surgery using a specifically designed questionnaire consists of two main sections. Section A contains questions investigated data about background variables include age, gender, duration of pain, and preoperative functional status. Section B contains questions about the patients' satisfaction with the surgery outcomes include the following items.

1. Relief of leg pain after surgery.
2. Improved movement and activities after surgery.
3. Sleep becomes comfortable after surgery.

4. Return to work after surgery.
5. Ability to exercise after surgery.
6. Generally satisfied with the surgery outcomes.

The responses for the first five statements were collected in 5-grade scale included strongly dissatisfied, dissatisfied, I do not know, satisfied and strongly satisfied. The last question was assessed by dichotomous response (Yes/No). Written consents were obtained from the patient twice, firstly before undergoing the surgery and the second occasion was post-operatively before questionnaire interviewing. The collected data were analyzed by the statistical package and any P value less than 0.05 was decided to be a statistically significant.

RESULTS

Table. (1): Distribution of background variables among included patients.

Background variable	Frequency	Percent
Gender	Male	29 42.6%
	Female	39 57.4%
Age group	20 - 29	2 2.9%
	30 - 39	8 11.8%
	40 -49	16 23.5%
	50 - 59	28 41.1%
	≥ 60	14 20.7%
Duration of pain	≤ 1 year	21 30.9%
	2 – 4 years	29 42.6%
	5 – 7 years	7 10.3%
	≥ 8 years	11 16.2%
Preoperative functional status	Good	24 35.3%
	Poor	44 64.7%

Table. (2): Patients' satisfaction distributed according to the post-operative clinical outcomes.

Post-operative clinical outcomes	Frequency	Percentage
Relief of leg pain after surgery	Strongly satisfied	29 42.6%
	Satisfied	13 19.1%
	I do not know	2 2.9%
	Dissatisfied	17 25.0%
	Strongly dissatisfied	7 10.4%
Improved movement and activities after surgery	Strongly satisfied	26 38.2%
	Satisfied	16 23.5%
	I do not know	3 4.4%
	Dissatisfied	13 19.2%
	Strongly dissatisfied	10 14.7%
Sleep becomes comfortable after surgery	Strongly satisfied	24 35.1%
	Satisfied	15 22.0%
	I do not know	7 10.4%
	Dissatisfied	15 22.1%
	Strongly dissatisfied	7 10.4%
Return to usual work smoothly after surgery	Strongly satisfied	30 44.1%
	Satisfied	22 32.4%
	I do not know	11 16.2%
	Dissatisfied	3 4.4%
	Strongly dissatisfied	2 2.9%
Ability to exercise after	Strongly satisfied	18 26.4%

surgery	Satisfied	17	25.0%
	I do not know	10	14.7%
	Dissatisfied	3	4.4%
	Strongly dissatisfied	20	29.5%
Generally satisfied with the surgery outcomes	Yes	37	54.4%
	No	31	45.6%

Table. (3): The predictors of general patients’ satisfaction with clinical outcomes of lumbar disc herniation surgery.

Predictor		Rate of patients’ satisfaction (%)	Chi-square	P value
Age group	20 - 49	21 (80.8%)	5.26	0.022
	≥ 50	16 (38.1%)		
Gender	Male	19 (65.5%)	2.51	0.113
	Female	18 (46.2%)		
Duration of pain	≤ 4 year	32 (70.0%)	7.00	0.008
	> 4 years	5 (27.8%)		
Preoperative functional status	Good	17(70.8%)	4.03	0.045
	Poor	20 (45.5%)		

All the included patients (68) underwent evaluation of their satisfaction with clinical outcomes of lumbar disc herniation surgery. Approximately 57% of the patients were females, and the mean age of the patients was 51 years old with range from 21 to 65 years old. The majority of patients (61.8%) were above 50 years old with 3.7 years mean duration of symptoms. About 65% of the patients were complaining of poor functional status with difficulty in the usual movement (table 1).

The majority of patients reported strong to fair satisfaction in regards to all post-operative clinical outcomes. The highest patients’ satisfaction was reported with the returning to the usual work after surgery, where 44.1% said they strongly satisfied and 32.4% said they fairly satisfied with return to work after the surgery. This was followed by the satisfaction rate of leg pain relief and improved movement after surgery, where 61.7% of the patients reported they were satisfied with these outcomes. The least patients’ satisfaction was demonstrated in regards to the ability to exercise after surgery by only 51.4% of the patients, followed by the satisfaction with obtaining of comfortable sleeping in 57.1% of the patients (table 2).

The significant predictors of the patients satisfaction was demonstrated with P values in table (3). Age, duration of pain and preoperative functional status were significant predictors for the general patients’ satisfaction with clinical outcomes of disc herniation surgery, while the gender was not significantly associated with patients’ satisfaction. A significantly higher satisfaction rate (80.8%) was reported among patients < 50 years old while the general satisfaction rate was only 38.1% among those ≥50 years old (P = 0.022). Those who have been complaining of pain for ≤ 4 years reported a significant higher satisfaction rate (70%) compared to those who had pain for longer period (27.8%). A higher satisfaction rate was reported among patients with good

preoperative function status (70.8%) compared to only 45% satisfaction rate among those with poor functional status (P = 0.045).

DISCUSSION

The subjective outcome of the lumbar disc herniation surgery can be represented by patients’ satisfaction. Thus, assessment of patients’ satisfaction with the surgical outcomes can be an indirect measure for the success of this surgery. The study of factors influencing patients’ satisfaction can improve our knowledge to avoid that factors which predisposing to the bad outcomes of the surgery.

In this study, approximately 57% of the patients were females and about 62% were above 50 years old. Soroceanu et al. recruited a majority of women who subjected to the spine surgery. This women tendency can be attributed to the increased prevalence of vertebral fractures among women than men, especially, in postmenopausal period.^[19]

In the present study, the majority of patients reported satisfaction in regards to all post-operative clinical outcomes, and 54.4% of them were generally satisfied with the surgery outcomes. Ronnberg et al. found higher satisfaction rate, where 82% of the patients were satisfied with the given about surgery.^[6] They found that 80% of the patients were satisfied pre and postoperatively with provided information about the surgery. Silverplats et al. found 70% of the patient were satisfied with the surgical outcomes on short and long-term evaluation.²⁰ Many studies have found high satisfaction rate up to 90% in patients underwent lumbar disc herniation surgery.^[7,18,21] A study conducted by Atlas et al., aimed to compare surgical and non-surgical treatment, found better satisfaction among surgically treated group after 10 years follow up period.^[22]

In the present study, the highest patients' satisfaction was reported with the returning to the usual work after surgery, where 44.1% said they strongly satisfied and 32.4% said they fairly satisfied with return to work after the surgery. This high rate of satisfaction can be explained by the preoperative functional status since 65% of the patients were complaining of poor functional status with difficulty in the usual movement. This is in agreement with the findings of Atlas et al., where 70.5% were satisfied with the functional status after surgical intervention.^[22]

This study found the satisfaction rate of 61.7% concerning leg pain relief and improved movement after surgery. Atlas et al. found a slightly higher rate of satisfaction where 69% said the leg pain was improved after surgery.^[22]

In this study, factors include age, duration of pain and preoperative functional status were significant predictors for the general patients' satisfaction with clinical outcomes of disc herniation surgery. Silverplats et al. found that short duration of leg pain was associated with good to excellent satisfaction with the surgical outcomes.^[20]

In the present study, a higher satisfaction rate was reported among patients with good preoperative function status (70.8%) compared to only 45% satisfaction rate among those with poor functional status. This is consistent with the results of Rönnerberg et al. who found good surgical outcomes and patients satisfaction associated with good preoperative functional status.^[6]

The limitations of this study include use of short postoperative assessment of patients' satisfaction; follow up in long periods (years) would be more informative. In addition, the lack of preoperative assessment of patients' expectation made us unable to link the patients' expectations with the postoperative satisfaction level.

CONCLUSION

We concluded that the majority of patients reported satisfaction in regards to all post-operative clinical outcomes. The patients were most satisfied about return to work while they were least satisfied about their ability to exercise after the surgery. Age, duration of pain and preoperative functional status were significant predictors for the general patients' satisfaction with clinical outcomes of disc herniation surgery.

CONFLICT OF INTEREST

The author stated no financial conflict of interests.

ACKNOWLEDGEMENT

The author acknowledges the great assistance of health staff in orthopedic department, King Faisal Specialist Hospital.

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